

Pickett (Thos. E.)

THE TESTIMONY OF THE  
MOUNDS.





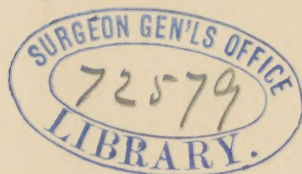
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## The Testimony of the Mounds:

*Considered with especial reference to the Pre-  
Historic Archæology of Kentucky and  
the adjoining States.*

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BY THOS. E. PICKETT. *M.D.*



*This is the Riddle of the Sphinx, which no  
Œdipus has yet had the ingenuity to  
solve.--PRESCOTT.*





# The Pre-Historic Inhabitants of Kentucky.\*

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ASSUMING the "ternary classification" of the several varieties of mankind to be exhaustive and exact, it is perhaps allowable to say that, within the memory of men now living, offshoots of three distinct primordial races—the RED, the WHITE, the BLACK—have multiplied and flourished in the heart of the Mississippi Valley. To the Red man this wondrous central region (to which he gave the name *Kentuck-e*) was a land of Darkness and Blood; to the Black it has been a field of "involuntary servitude;" to the White it is the seat of an advancing civilization. But quite beyond the range of human memory, and closed to all ordinary methods of historic research, there lies a mysterious past, embosoming a mighty civilization which the modern eye sees looming dimly through misty traditions and enigmatical remains.

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\*Written for the revised edition of "Collins' History of Kentucky," and communicated to the Anthropological Institute of New York, in the autumn of 1871. Reprinted, with notes.

Since merged into "The American Ethnological Society".

Patient and critical investigation has found numerous traces, in the Western valleys, of a remarkable race of men, peculiar in their ethnic affinities, compact and powerful in their social organization, sagacious and enterprising in war, skilled in the industrial and domestic arts, devoted to the rites of a symbolical cult, and familiar with those principles and forms of political administration which give stability to the conditions and institutions of a state. These were the pre-historic inhabitants of Kentucky, whose origin, development, character, status, affinities, and fate we purpose briefly to consider.

Our materials for this consideration are derived chiefly from three sources—native traditions, hieroglyphic records, and tumular remains. Whilst there is nothing inherently trustworthy or conclusive in the traditional lore of the wigwam, there have come down to us certain Indian traditions which—viewed in connection with the testimony of the mounds and mural remains, and of the hieroglyphic pointings of Aztec historiography—seem to cast a faint gleam of light into the gloom and mystery of those pre-historic days. There is an old Delaware tradition, for example, which says that, many centuries ago, the LENNI-LENAPE, a powerful race which swept in a flood of migration from the far West, found a barrier to its eastward progress in a mighty civilization which was intrenched in the river valleys east of the Mississippi. The people who occupied these fortified seats are traditionally denominated the ALLEGEWI. The two nations thus confronting each other upon the banks of the Mississippi, measured the situation with a civilized eye—the Lenni-Lenape diplomatically parleying for the right of passage, and the subtle Allegewi hypocritically affecting to hear. As a result of these diplomatic negotiations, the Lenni-Lenape were treacherously assailed in an attempted passage, and driven back, though not utterly destroyed, by their perfidious foe. But the tradition further relates that there was a coincident migration of the warlike IROQUOIS from the far West on a higher line of latitude, and that this people were seeking to effect a passage of the same stream at another point. The Lenni-Lenape, speedily rallying from their repulse,

strike a military league with the Iroquois, proclaim a war of extermination against the Allegewi, reduce their strongholds, desolate their lands, and drive them southward in disastrous retreat—their chosen seats being abandoned to the conqueror in tumultuous haste, and themselves becoming a nation of wanderers upon the shores of the stream which they had perfidiously attempted to defend. But this tradition of the Delawares does not stand alone. That the pre-historic inhabitants of Kentucky were at some indeterminate period overwhelmed by a tide of savage invasion from the North, is a point upon which Indian tradition, as far as it goes, is positive and explicit. It is related, in a posthumous fragment on *Western Antiquities*, by Rev. John P. Campbell, M. D., which was published in the early part of the present century, that Col. James Moore, of Kentucky, was told by an old Indian that the primitive inhabitants of this State had perished in a war of extermination waged against them by the Indians; that the last great battle was fought at the Falls of the Ohio; and that the Indians succeeded in driving the Aborigines into a small island below the Rapids, “where the whole of them were cut to pieces.” The Colonel was assured that the evidence of this event rested upon facts handed down by tradition, and that he would have decisive proofs of it under his eyes as soon as the waters of the Ohio became low. When the waters of the river had fallen, an examination of Sandy Island was made, and “a multitude of human bones was discovered.”

There is a similar confirmation of this tradition in the statement of General George Rogers Clarke, that there was a great burying-ground on the northern side of the river, but a short distance below the Falls. According to a tradition imparted to the same gentleman by the Indian chief Tobacco, the battle of Sandy Island decided finally the fall of Kentucky, with its ancient inhabitants. When Colonel McKee commanded on the Kanawha (says Dr. Campbell,) he was told by the Indian chief Cornstalk, with whom he had frequent conversations, that Ohio and Kentucky (and Tennessee, also, is associated with Kentucky in the pre-historic ethnography of Rafinesque) had once been



settled by a white people who were familiar with arts of which the Indians knew nothing; that these whites, after a series of bloody contests with the Indians, had been exterminated; that the old burial-places were the graves of an unknown people; and that the old forts had not been built by Indians, but had come down from "a very long ago" people, who were of a white complexion and skilled in the arts.

In addition to this traditional testimony, various and striking traces of a deadly conflict have been found all along the Ohio border. To say nothing of the vast system of fortifications covering exposed and important points, and evidently designed as a general barrier against hostile incursions, there are significant traces of former conflicts in the old "battle fields" of Bourbon, Pendleton, and Bracken counties, which, clearly indicating occurrences beyond the pale of the historic period, confirm in some measure the traditional theory or belief of a protracted and desolating struggle for the possession of this border-land.\* And doubtless the familiar appellation of "*The Dark and Bloody Ground*" originated in the gloom and horror with which the Indian imagination naturally invested the traditional scenes and events of that strange and troubled period. General Clarke declares that *Kentuck-e*, in the language of the Indians, signifies "the river of blood." (*A.*)

It is not improbable, judging from the frequency with which fortifications occur upon the banks of water-courses, that the bloodiest battles were fought upon the banks of navigable streams. *Kentuck-e*, to the Indian, was a land of ill-repute, and, wherever a lodge-fire blazed, "strange and unholy rumors" were busy with her name. The old Indian who described to Colonel Moore the sanguinary and decisive battle of Sandy Island expressed great

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\*Near Moorfield, in Nicholas county, about fifty miles from the Ohio border, there is an old "battle ground" embracing an area of fifteen acres. Beneath a light stratum of dark, rich surface-soil great numbers of human bones have been found; and from a neighboring tumulus, which has been partially explored, there have been taken pipes, arrow-heads, etc., together with human crania of remarkable size.



astonishment that white people could live in a country which had been the scene of such conflicts; and an ancient Sac, whom Colonel Joe Hamilton Daviess met at St. Louis in 1800, gave utterance to similar expressions of surprise. Kentucky, he said, was filled with the ghosts of its slaughtered inhabitants: how could the white man make it his home?

Such are some of the pointings of tradition. Their peculiar significance will be more fully realized as we proceed.

The shadowy beings who peopled this lurid past are now known only by their works. They are simply the MOUND-BUILDERS. The chief memorials of their existence are the tumuli, or mounds of earth, and other works of strange design starting in massive relief from the soft green bosom of our woodlands, and the terraced banks of our immemorial streams. For years the philosophic antiquary has stood, in patient and critical inquest, over these mysterious remains. Thorough excavation, careful survey, exact delineation, and faithful description may assist materially in the formation of correct and satisfactory conclusions; but, after all, we shall be obliged to confess that our doubts are many, and that the mystery is deep. Even now we come with stereotyped queries to the study of these monumental heaps. Were they sepulchres? temples? or fortresses? Beneath this sloping area, the Mound-builder might have buried his dead; from it, flung defiance to a foe; upon it, made sacrifice to the gods. Why not fortress, temple, tomb, at once? Or, again: What light do these remains shed upon pre-historic religion, polity, and art? Do they assist to simplify the knotty problems of the ethnologist? Do they develop unsuspected relationships of blood? Are they significant of derivative ideas in religion and art? Or do they point to a primordial race, and to an independent development of ideas and institutions springing from a peculiar and isolated environment or *milieu*? These queries have never been definitely answered; but we have secured at least a sound basis for extended and systematic investigation. What has been accomplished thus far within given geographical limits, it is our purpose to present, in a succinct form; confining our statement, in the

main, to a simple record of results, and while striving to be brief, studying with equal solicitude to be clear.

The foot-prints of the Mound-builder may be traced wherever the Mississippi and its tributaries flow; in the fertile valleys of the West, and along the rich savannas of the Gulf; upon the Ohio, the Kentucky, the Cumberland, the Licking; upon the streams of the far South, and as far north as the Genesee and the head-waters of the Susquehanna; but rarely upon mountainous or sterile tracts, and almost invariably upon the fertile margins of navigable streams. Within these limits, the population of that Old American World corresponded almost perfectly in its distribution with that of the New. These ancient citizens enjoyed a wide range of communication. Antiquarian research has gathered, from the same mound, the mica of the Alleghenies, obsidian from Mexico, native copper from the Northern Lakes, and shells from the Southern Gulf. The mounds themselves are multitudinous in number, peculiar in structure, and varied in character. The precise number in the State of Kentucky has never been accurately estimated, possibly will never be. In form, most of the mounds are ellipsoidal or cone-like; many of them are pyramidal, and of striking dimensions; they are always truncated, are sometimes terraced, and generally have graded and spiral ascents to the summits. It was at one time suggested, and the hypothesis with a certain degree of plausibility maintained, that these elevations of earth were natural formations—the results of diluvial action. But the “theory” was scarcely reconcilable with the facts, and has long since passed into the limbo of exploded hypotheses.\*

The form, position, structure, and contents of the mounds afford convincing proof of their artificial origin. The Altar Mounds, which are supposed to have been places of sacrifice, are found either within, or near an enclosure, are stratified, and contain altars of stone, or of burned clay: whereas, the Mounds of Sepulture, or the burial-places, are isolated, unstratified, and con-

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\*See Bancroft: *History of the United States*. Vol. III.

tain human remains. The Temple Mounds, which are "high places" for ceremonial worship, differ from the preceding in containing neither altars nor human remains. In addition to these there are certain anomalous mounds, mounds of observation, signal mounds, etc., which defy all precise or satisfactory classification.\*

The Temple, or terraced, Mounds are said to be more numerous in Kentucky than in the States north of the Ohio river—a circumstance which implies an early origin of the familiar phrase "sacred soil!" The striking resemblance which these Temple Mounds bear to the *teocallis* of Mexico, has suggested the purposes to which they were devoted and the name by which they are known. Some remarkable works of this class have been found in the counties of Adair, Trigg, Montgomery, Hickman, McCracken, Whitley, Christian, Woodford, Greenup, and Mason. The Temple Mound near Lovedale, in Woodford county, is a very interesting specimen of this class—an octagonal work with graded ascents at each of the northern angles; and there is a work of curious design near Washington, in the county of Mason, which, though differing in form from the preceding, is obviously a specimen of the *teocalli* class.

There is, also, a Temple Mound in Greenup county, which has excited a good deal of interest. It forms part of a connected series of works communicating by means of parallel embankments, and embracing the chief structural elements peculiar to this class of works. On a commanding river terrace stands one of the groups of this series—an exact rectangle, eight hundred feet square, with gateway, bastion, ditch, and hollow-way, with out-works consisting of parallel walls leading to the north-east, and to the south-west, from opposite sides of the rectangular enclosure. The work has many of the salient features of an extensive fortification, and appears to have been designed for purposes of military defense; and yet there is nothing to forbid the supposition that its sloping areas were also devoted to the

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\*See *Squier and Davis*.



imposing rites of a ceremonial worship. There is a corresponding group on the opposite bank of the Ohio river, which is obviously sacred or superstitious in its origin and design. The third group of this series consists of four concentric circles, intersected at right angles by four broad avenues, conforming very nearly to the cardinal points of the compass. In the center is a large mound, truncated and terraced, with a graded way leading to the summit. This group rests upon a lofty terrace, at the base of the hills which border the beautiful river valley. About a mile to the west of this is a small circular work with a central mound, which is approached from the exterior by a narrow gateway through the parapet, and a causeway over the ditch. There seems to have existed a connection originally, by parallels, between the several groups of this unique and enigmatical series of works. The total length of the embankments now traceable is about eight miles. Whether we assign to these works a military or a religious origin, it is impossible not to admire the architectural skill of construction, the artistic symmetry of proportion, and the geometrical exactness of design. Can we resist the conclusion that this ancient people possessed a standard of measurement? a means of determining angles? a method of "plotting" geometrical areas?

In Montgomery county, there is a large truncated mound, connected by an elevated way, with a circular work having a central mound, and a gateway opening to the east. There is also a group of works on Brush Creek in the same county, exhibiting features of peculiar interest; a circular work, five hundred feet in circumference, with an interior ditch and an hexagonal enclosure, each face or side measuring fifty feet—both works having gateways opening to the east, and the former work having certain features of construction which are common to works of the same class in Ohio. There are ancient works of considerable interest in Fayette county, at the junction of the Town and South Forks of the Elkhorn, and another group at the mouth of Flat Run in Bourbon county—both of which, from obvious characteristics, must have served at one time as works of defense.

But as it is impossible, in the brief limits necessarily assigned for the consideration of this subject, to refer to these works in detail, a few general remarks of an explanatory tenor must suffice: The defensive or military character of an ancient work seems to be indicated by its commanding position, its general strategic advantages, its contiguity to water, its exterior ditch, and its peculiar situation with reference to other works. A high antiquarian authority is satisfied with a single criterion—the relative position of the ditch.\* This he deems decisive. But when, in addition to this, we find a line of simple or bastioned works occupying a peninsular terrace or a precipitous height, “covering” an important region of country, commanding every position, guarding every approach, served by protected lines of communication, and convenient to points of supply, there would seem to be no further room for doubt. (*B.*) It must be remembered, too, that we see the works in a thoroughly dismantled condition. Possibly those parapets once bristled with palisades; the glacis, we may suppose, was fringed with *abatis*; and who knows but that those mysterious gaps in the lines of defense, which hasty theorists assume to have been gateways, were once filled with bastion-like projections of wood, analogous to the later “block-houses” of the pioneer? If any such engineering devices were employed by the Mound-builder (and the archaeologists are by no means sure that they were not,) they were constructed of perishable material, and have long since passed away. There seems to have been a complete system of these defenses, extending from the sources of the Allegheny and the Susquehanna to the Wabash—as if designed by a peaceful and prosperous population to afford permanent protection against savage aggressions from the North and East. It has been suggested, however, that a tide of invasion, or migration, flowing from the South received its final check upon this line—these defenses marking the limit, just as military remains are often found marking the tenable limits of Roman conquest. The two theories are not irrecon-

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\*Stukely.

cilable. This line of defenses may have been a Chinese barrier guarding a peaceful and populous realm, or a Roman wall securing a subjugated province by holding the barbarian at bay.

But at least one conclusion we are obliged to accept: These defenses were not constructed by a migratory or nomadic people. They are the work of a vast population, perfectly organized and permanently established on an agricultural basis. Whether Indian Corn [*Zea Mays*] was indigenous to America, or whether it came in with the Toltecs, it certainly is safe to assume that it was the Mound-builder's staple grain. There is not the slightest proof that he had any knowledge of the so-called "cereals of the Orient"—wheat, rye, barley, oats, &c. On the other hand, there is incontestable evidence that the aboriginal knowledge of Indian Corn greatly antedated the discovery of the continent. Maize was a sacred grain, a divine gift, an immemorial blessing. It was the legendary Mondamin, with garments of green and plumelets of gold; and, less poetically, it was the agricultural staple which gave substance and strength to the powerful semi-civilizations of Mexico and Peru. (C.)

Within the limits of the State of Kentucky the remains of ancient fortifications are numerous. Almost invariably we find them situated upon large water-courses. In Allen, Bourbon, Boone, Fayette, Pendleton, and other counties of the State, are some very interesting monuments; and it is worthy of note that these structures generally correspond in site with modern centres of population; that, wherever found, they are strikingly analogous in their essential features to the military remains of ancient Mexico and Peru, and are palpably impressed, as are the other remains of the Mound-builder, with the stamp of a peculiar ethnic genius—suggestive, if not significant, of affinities which a superficial consideration of the remains would scarcely lead us to suspect.

The religious structures of this ancient people are equally curious in the analogies which they reveal. Why, for example, did this old superstition build its structures usually upon the



margin of a stream?\*

In ancient Mexico and Peru, lakes and rivers were objects of religious veneration. Was water a sacred element in the worship of the Mound-builder? In Mexico, natural caverns were used as places of sepulture. Is it not probable that the caves of Kentucky were ancient depositories of the dead? Unquestionably, mummies and human skeletons have been found in some of them. The Mexicans practiced inhumation, embalming, and cremation. The Mound-builder, in disposing of his dead, likewise buried, embalmed, and burned. The Mexican and Peruvian temples corresponded in position with the cardinal points of the compass. We have noted the same peculiarity in the sacred structures of the Mound-builders. The traditional name of the ancient mounds, among the Choctaws, was *Nanne-Yah*—the Hills or Mounts of God—a name almost identical, it is said, with that of the Mexican pyramids. Who can fail to perceive that the same principles of architecture have governed the construction of both? and that the Temple Mound of Kentucky is but a ruder form of the Mexican *teocalli*?

The mythology of the Toltecs symbolized creative power, or the productive principle, under the form of the Phallus. (*D.*) There is strong reason to believe that the primitive inhabitants of the Mississippi Valley were worshipers of the same significant emblem; and that the doctrine of "the reciprocal principles of nature," as symbolized in Mexico and Peru by the Sun and the Moon, or the Sun and the Earth, also obtained a distinct recognition in the Mound-builder's mysterious creed. Wherever humanity has worshiped and wrought, may be traced the symbolical worship of the Serpent. Whether we explain the universality of the symbol by the orthodox assumption that it resulted from a traditional recognition of the Paradisiacal Devil, or whether we incline to the philosophic theory that like conditions and constitutions may generate religious ideas of a cognate type, we are equally obliged to accept the alleged universality as a symbolical fact. It was conspicuous in the religious system of the

\*See note (\*) page 15.

ancient Mexicans, and was essentially significant of the same cosmological idea which it represented in the primitive mythologies of the East. There seems to be nothing incredible, therefore, in the suggestion of Mr. E. G. Squier that "the Serpent and Egg of Ohio are distinctly allusive to the same specific notions of cosmogony;" and quite as plausible is the supposition that the mystic enclosures and parallels of Greenup have their symbolical analogues in the vast serpentine structures of Abury and Carnac. (*E.*) Nor is the supposition incompatible with the theory which assigns to these works a military origin—since not unfrequently, in the pressing emergencies of war, a people's only strongholds of defense are its temples of devotion and the sepulchres of its dead. Were human struggles ever fiercer or bloodier than upon the terraced adoratorios of Anahuac?

The structural remains of the Mound-builder, in all their varied forms, are characterized by that simplicity, symmetry, and solidity which Humboldt remarked in the Toltcan monuments of other lands. Some of them, it has been plausibly inferred from reason and analogy, are symbolical in construction, and connected with the observance of superstitious rites. As we have previously intimated, the peculiar structures in the county of Greenup, with their associate groups, are supposed to be works of this class—though it must be confessed that the indications of the supposed fact are by no means decisive. But whether these ancient structures are military, sepulchral, or sacrificial—whether square, elliptical, circular, or polygonal—or whether combining these geometrical elements in series or group, and designed at once for worship, sepulture, sacrifice, and defense,—there are architectural elements common to all, which identify them as parts of a peculiar and comprehensive system; a necessary and characteristic outgrowth of an embryonic civilization, originating with a race distinguished in all its branches by common traits, created unto a common destiny, moving under the same original impulse, undergoing contemporaneous or successive development under like conditions, and conforming throughout its existence to the same laws of origin, progress, and decline. The Mound-builder

fixed his habitation, established his fortresses, and builded his temples precisely where the highest civilizations seek sustenance and strength; that is to say, in a land and latitude where the climate is genial, where the grasses flourish, and the waters flow. His chosen seats, as we have shown, were contiguous to broad streams, and in the midst of fertile lands—the one insuring easy communication; the other, abundant food. If occasionally he deserted the alluvial valleys, and went up into the mountains or builded upon the hill-tops, it was manifestly for peculiar purposes of worship, or when driven by the necessities of war. His favorite site for structures of large dimensions and regular design was the broad, level terrace of a river valley;\* but where the works are irregular in design, and indicate in their construction the handiwork of the military engineer, they are usually so situated as to guard an important approach, or complete the defense of a position naturally strong.

A critical and comprehensive treatise on Aboriginal Art would be a work of rare interest; not that the Aborigines cultivated the arts with signal success, nor that there was the faintest gleam of promise in the almost puerile crudeness of the results—for the art-remains of the Mound-builder reveal only the merest dawning of the æsthetic faculty or instinct; but that such a treatise would be a valuable contribution to our knowledge of an extinct civilization by extending our range of related data, and enabling us, in a measure, to reconstruct its annals from its monumental débris. Possibly the Champollions of the future may do something toward wresting these coveted secrets from the reluctant past. That the Mound-builders were in possession of a hiero-

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\* From which it would appear that the Mound-builder was not wholly insensible to the charms of natural scenery. On the contrary, his tasteful selection of building-sites seems to have been the expression of a passion for the picturesque. We have another suggestive illustration of this characteristic in the traditional acceptance of the aboriginal phrase, *O-he-o!* It is an "exclamation-substantive," says Schoolcraft, descriptive of "an extended and beautiful water-prospect." The early voyageur upon the waters of the Ohio clumsily embodied the aboriginal idea in the familiar paraphrase, *La Belle Rivière*.



glyphical method of communicating ideas and recording events, is by no means a violent assumption. It may not only be inferred from the complex, compact, and preponderant character of their civilization, but the inference seems to be fairly sustained by evidence bearing directly on the point. The sculptural inscriptions observed by Bishop Madison in Western Virginia, near the confluence of the Elk and Kanawha rivers, not to mention similar inscriptions trace dupon the lofty river-cliffs of the South and West,—have been particularly indicated as possessing a hieroglyphical significance. A stone presenting like characteristics is said to have been found near the confluence of the Ohio and Big Sandy rivers, on the Kentucky shore—which falling sacrifice to the utilitarian spirit of the age, was robbed of its “outline figures and emblematical devices” through the vulgar agency of a stone-mason’s hammer.\* Is the story true? We trust sincerely that it is not. We should be loath to believe that any denizen of that charming valley would have permitted himself to feel less interest in the solution of ethnological problems than in the symmetrical construction of “a cellar wall.” We dismiss it, therefore, as a bit of archæological gossip.

Whilst it is impossible to present the evidence on this subject in detail, we think it is highly probable that the Mound-builder was familiar with an ideographic method analogous to that of the Aztec, with whom doubtless he maintained commercial, and, possibly, political, relations; but whether he had advanced so far in the arts of civilization as to have evolved the idea of *printing in colors*, is a question which we shall not hastily decide. And yet the assertion has been gravely made, respectfully considered, and favorably received. “This nameless people,” says a late writer, \* \* \* “approached very near to the discovery of printing, if, as it is believed, they traced designs in relief, which, coated with oxide of pulverized iron, served to impress various ornaments on the skin;”† that is to say, by means of movable

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\* *Squier and Davis.*† *Western Journal and Civilian*, Vol. XV. No. 3.

types, smeared with an ink of iron rust, they gave their bodies the impress of a superficial "tattoo."

The Mound-builder was nothing of a Greek in matters of art. His conception of "aesthetics" was but elementary at the best. At the same time, his art was admirable within certain limits. The carvings upon his red stone pipes, and the designs upon his sculptural tablets, were marked by an exquisite delicacy of finish, and, in the merely-mechanical portraiture, by a marvellous fidelity to detail. In his representations of the human form, he has been surprisingly felicitous in depicting attitude and physiognomical expression, though less so than in his representations of the lower animals. All are striking, faithful, and animated, but slavish, unspiritual, uninspired; not the unique and inimitable creations of Hellas, but the grovelling conceptions and servile imitations of Egypt and Cathay. It is interesting to observe, however, that in his plastic presentments of the human head, the anatomical configuration and physiognomical traits conform in all essential particulars to what ethnologists have recognized as a universal *American type*; and this circumstance gives a scientific value to sculptural remains which are comparatively valueless as specimens of art. (*F.*)

Akin to sculpture, is the less ambitious art of the potter; and, oddly enough, to the antiquarian student no field of observation is more inviting or instructive than the potter's field. A familiar type of fragility is the potter's vessel; fictile passivity is expressly imaged under the scriptural similitude of clay in the hands of the potter. Yet the frail products of the potter's art often outlast the palaces of kings, and specimens of primitive pottery are recovered from the earliest ruins of "the antique world." The shattered civilizations of America have left abundant traces of this primeval art. The Mounds of the Mississippi Valley have furnished specimens which, in delicacy of finish and elegance of design, rival the strikingly similar productions of ancient Peru. The material from which they are wrought is either simple, unmixed clay, or a composition of varying elements—sometimes consisting of gypsum (sulphate of lime) mixed

with clay. In composition, quality and finish, many of these specimens exhibit an advanced knowledge of "applied" chemistry—being equal, in many technical requisites, to the most pretentious products of modern art. The Triune vessel, as it is called,\* found in an ancient work upon the Cumberland, and consisting of three heads joined in one, presents three human faces brilliantly colored in yellow and red—the colors having been applied, doubtless, before the clay or composition was subjected to the action of heat.† That the Mound-builder was a practical chemist of no mean pretensions, is further indicated by the beads of glass which he sometimes deposited in his mounds—glass of a transparent green, with an opaque enamel of an exquisite white or red—the whole curiously fashioned and artistically wrought. (G.) The Mound-builders were also skilful workers in stone. To say nothing of minor proofs of their skill in fashioning this material, their fortresses sometimes had walls of stone; and in this State have been found sepulchral tumuli of the same material. But in the manufacture of weapons, mechanical implements, domestic utensils, and ornaments of stone, they exhibited marvelous skill. The crystal spear-head, the granite axe, the obsidian knife, and the breccia urn-lid, are finished specimens of their proficiency in this art, and are all the more astonishing as artistic productions, that the pre-historic artisan seems to have been wholly unacquainted with the mechanical uses of iron; and yet, without this metal, it is certain that he was in possession of mechanical agencies by which forests were felled, and fields were tilled, and the most obstinate materials wrought into shapes of surprising symmetry and grace. It is probable that he employed instruments of copper, worked in the cold state without alloy, and hardened by hammering. (H.) The Mound-builder's *pipe* was exquisitely sculpturesque. He

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\* Triple emblems of various shapes are frequently observed in the works of ancient art in Yucatan and Mexico. "Three" is a divine number, significant of perfection.—[*Dr. Arthur Schott*.

† *Archæologica Americana*, Vol. I. p. 238.



seems to have lavished upon it all the resources of his art, and we can easily believe that this elaborate trifle was as sacred in pre-historic eyes as a carefully imbrowned *meerschauum* is supposed to be in the estimation of the modern connoisseur. The great number and variety of these beautiful antiques have led to the supposition that they had a religious significance, and were in some way connected with observances of ceremonial worship.\* Among the minor relics recovered from the mounds are certain *tubes of stone*, which swift antiquarian conjecture has associated with the aboriginal pursuit of "star-gazing;" some writers assuming the tubes to have been telescopic aids to the eye. We incline to the more commonplace hypothesis, that they were the tubes of *pipes*.† Undoubtedly, there is reason to believe that the Mound-builder was familiar with the elements of astronomical science; but there is also ground for the impression that he had a devout and enlightened appreciation of the virtues of the "sacred plant." Tobacco was the soothing and propitiatory incense which he offered to his gods, and it is not incredible that the fumes of his consecrated calumet were breathed to the sky a thousand years before the golden youth of England were seduced by the charms of Virginian leaf. And who knows but that the sacred soil of Kentucky—a land of temples, hierarchs, and tombs—was contemporaneously consecrated to a systematic culture of the "weed?"

The pre-historic Kentuckian was familiar with a process of embalming. Of this there is incontestable proof. Disregarding all conjecture on the subject, we limit our remarks at present solely to a consideration of the *fact*. In the sketch of Edmonson county, given in "Collins' History of Kentucky," (Vol. I.)

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\* Mr. Lucien Carr, of the Kentucky Geological Survey, has in his possession a beautiful specimen of the Calumet-Idol, representing the head of an owl, admirably carved in stone. The specimen was found in the bottom opposite Indian Hill, on Green river. [See Note A.] According to the mythology of the ancient Mexicans, the spirit of evil was wont to take this uncanny shape.

† *Western Journal*.

there is a minute and accurate description of a mummy found in the Mammoth Cave in the year 1813. The body (says the writer) was in a state of perfect preservation and sitting erect; the arms folded and hands laid across the bosom; clad in a wrapping of dressed deer-skins ornamented with the imprints of vines and leaves, sketched with a substance perfectly white; outside of the skins and enveloping the whole body, a large square sheet which was either woven or knit; the fabric was of the inner bark of a tree, in its appearance and texture resembling the South Sea Island cloth or matting; the hair of the head was of a dark red color and *cut short*; the teeth were white and perfect; the height of the figure was that of a very tall female, say five feet ten inches; the bones of the fore-arm from the elbow to the wrist joint measured ten and one-half inches; the color of the skin was dark, not black; the flesh was hard and dry upon the bones; the moccasins of woven or knit bark\* denoted feet of small size; in a knapsack, or reticule, of the woven or knit bark were seven splendid head-dresses made of the quills of large birds. The features were regular, and much resembled those of a tall handsome American woman. The forehead was high and the head well-formed. The body at the time it was discovered weighed but fourteen pounds, and was perfectly dry. In the year 1815, a mummy from a cavern in the neighborhood of Glasgow was exhibited in the city of New York, and was described by the Hon. Samuel L. Mitchell in a letter to the American Antiquarian Society.† Having characterized the embalmed body as a "perfect exsiccation"—a mere anatomy of osseous and cuticular tissue—he says:

"It was found enwrapped carefully in skins and cloths. The outer envelope of the body is a deer-skin. The next covering is a deer-skin, whose hair has been cut away by a sharp instrument. The next wrapper is of cloth, made of

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\* Recent explorers have found moccasins of knit or woven bark, together with samples of pre-historic cloth, in one of the Green river caverns of this State. [See note I.]

† The *Weekly Recorder*, Chillicothe, Ohio, Vol. IV., 1815; now in the possession of Rev. Joel K. Lyle, Lexington, Kentucky. [September, 1871.]

twine, doubled and twisted, but the thread does not appear to have been formed by the wheel, or the web by the loom. The warp and filling seem to have been crossed and knotted, by an operation like that of the fabrics of the north-west coast and the Sandwich Islands. The innermost tegument is a mantle of cloth, like the preceding, but furnished with long brown feathers, arranged and fastened with great art, so as to be capable of guarding the living wearer from wet and cold. The plumage is distinct and entire. The body is in a squatting posture with the right arm inclining forward, and its hand encircling the right leg; the left arm hangs down, with its hand inclined partly under the seat. The individual, who was a male, did not probably exceed the age of fourteen at his death. There is a deep and extensive fracture of the skull, near the occiput, which probably killed him. The skin has sustained little injury; it is of a dusky color; but the natural hue cannot be decided with exactness from its present appearance. The scalp, with small exceptions, is covered with sorrel or fox hair. The teeth are white and sound. The hands and feet, in their shriveled state, are slender and delicate."

The description is interesting and suggestive, but, for the purposes of scientific investigation, not sufficiently full and precise. It does not vary materially, however, in its essential features from descriptions of other mummies found in this State, nor of similar remains discovered near the Cumberland river in Tennessee, in the caves near Durango, and in the *huacas* of Peru. In the Mexican caves the mummies were found "in a sitting posture, and wrapped in bands of cloth." The bodies recovered from the Peruvian mounds or *huacas* bore the marks of an embalming process, and occupied a flexed or sitting position. Both the Mexicans and Peruvians buried, with their dead, ornaments or articles of familiar use; and the cloths fabricated by the peoples of the south are said to be similar in texture to the wrappings which encase the mummies found in the caverns of this State. (/.) Travellers tell us that the natives of the Pacific islands "interred their dead in a sitting posture," and practiced a method of embalming similar to the American—"the body being preserved by exsiccation, without removing the entrails," and wrapped in voluminous folds of cloth. "These embalmed remains," says Bradford,\* "resemble closely the mummies found in the Kentucky caves, both in the method adopted for

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\* *Antiquities*, p. 411.

their preservation, in the wrappings or mummy cloths, and in the texture or fabrication of the latter." It is asserted that shells of marine fish of an exclusively Oriental habitat have been gathered from the sepulchral tumuli of the Western World, and certain shells found in an ancient work near Lexington are said to be identical with the species which is sacred to Maha Deva, "the Supreme God" of the Hindoo mythology.\* But what is more to the purpose, as pointing to the ethnical affinities or the commercial relationships of the Mound-builders, is the discovery in one of our caverns of some bones which are the remains of a *peccary*, or Mexican hog—an animal native only to Mexico and the countries of the south. It may be noted, too, as a suggestive fact, that the buskin, caps, and head-gear of the mummies entered into a costume which, in these particulars, bore a striking resemblance to the primitive "mode" of the ancient Mexicans.

The descriptions which have been given of the physical characteristics of the ancient Mound-builder have suggested a query which has been made the basis of some bold ethnological speculation. The question is this: Did the Mound-builder have *red hair*? "The scalp, with small exceptions," says Mr. Mitchell, somewhat vaguely, "is covered with *sorrel or fox* hair." "The color of the hair," says the writer, on page 20 herein, "was a dark *red*;" and Bradford, describing the mummies found on the Cumberland river in Tennessee, and in the Mammoth Cave and other caverns of Kentucky, says that the hair was "generally of a color varying from brown to yellow and *red*." This testimony would seem to be conclusive as to the prevailing tint of aboriginal hair, and might be hastily accepted as confirmatory of the theory which ascribed to the Mound-builders a European origin. But

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\* In India, the shell is sacred to the moon. The Mound-builders are traditionally represented to have worshiped the moon, which they regarded as "the elysium for the departed spirits of obedient females, where they might indulge at ease the passion of curiosity, in a ceaseless journey about the world." — *Traditions of Da-Coo-Dah*, p. 261.



we must reflect that, whilst human hair is known to be singularly superior to the ordinary influences of *decay*, the readiness with which it changes hue under chemical reagents shows it to be, in the matter of color, exceedingly penetrable stuff; and it is by no means improbable that the hair of the mummies had been changed by chemic influences of the atmosphere from a hue originally dark to a demonstrable shade of *red*—just as, through the subtle agencies of the coiffeur's art, tresses of midnight are sometimes brightened with the tints of dawn.\* Nor is this presumed transmutation of color peculiar to the mummies of Kentucky and Tennessee. Human remains from the sepulchres of Peru, examined by the Spaniards in 1790, “contained bodies in an entire condition, but withered and dried, and the hair of a *red color*;” and the results of a similar transmutation (according to a writer on Egyptian antiquities) “have sometimes been observed in the appearance of the Egyptian mummies, the hair having been changed in color from black to *red*.”

Thus much concerning the color of the Mound-builder's *hair*: Now, what is to be said in regard to his complexion, or the color of his *skin*? Had we conclusive proof that his hair was red, we should naturally, though not necessarily, infer that his skin was fair, and his eyes blue; and this inference would be strengthened, if not sustained, by the unvarying testimony of Indian tradition. Among the tribes of the Northwest, it was a current tradition that Kentucky had been settled by *whites*: An old Indian told Colonel Moore that the aborigines of Kentucky were *white*; the ancient Sac said to Colonel Joe Daviess, at St. Louis, that the early inhabitants of Kentucky were *white*; John Cushen, an intelligent and respectable Indian of Chillicothe, declared that the Mound-builders were *white*; and finally, the “very long ago

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\*The Dinkas impart these auroral tints to their hair by freely bedewing it with cow's urine and supplementing the wash with a generous application of dung and ashes, in the form of a “pomade.” The resulting “tinge of red” is doubtless the effect of the ammoniacal and other alkaline constituents of the pomade and wash, acting upon the oily pigment of the hair. [See *The Heart of Africa*, by Schweinfurth: Harpers, 1874.]

people" of Cornstalk were skilled in the arts, and *white*. This is the collective sense of Indian tradition derived from distinct and independent sources. There is no dissentient voice. The traditions are mutually supporting, and seem to drive with cumulative force to one inevitable conclusion. But how does this conclusion conform to the theory which assigns a Toltecan origin to the Mound-builder? and to the connected theory which makes the Toltecan people a branch of the great American race?\*. Shall we assume that this changed complexion was the result of what the philosophers term "ethnic differentiation?" If so, why were its effects manifest only in the Mound-building branch of the race? Or shall we reject this theory altogether, and assume that these ancient seats were occupied by a succession of pre-historic races, of which one, at least, was of an origin possibly European, and of a complexion presumably *white*? But it seems to us that it is unnecessary to ask these questions, since with the present data, it is certainly impossible to answer them. The most satisfactory solution of the difficulty is the simplest. The traditional impression as to the complexion of the Mound-builders may have been derived (as is suggested by Dr. Campbell, who records the tradition,) from a perception of the superior skill exhibited by the vanished race or races in the construction of military works; or it may imply simply that the Mound-builders were of a lighter hue than the peoples of later date. "The country was inhabited by *white* people once," said a Chillicothe Indian, "for none but white people make forts." According to Humboldt, the tribes of the Upper Orinoco, who, like our Mandans, were styled "White Indians," differed from other Indians only by a much less tawny color. Embalmed remains furnish but little light on the subject. The exsiccated "soft tissues" of the mummies give no hint of their original distinctive hue—at least nothing that is decisive. The skin is "dark,

\*There are strong reasons for supposing, with Von Humboldt and Von Hellwald, that in early epochs a procession of the later Inca races took place over the table-land of Mexico, carrying the Toltecan civilization to Peru.

not black," says one description; it was of a "dusky color," says another. (*J.*)

An examination of the osseous remains of the Mound-builder is not without interest, and, in some respects, is indispensable to a proper consideration of our theme. (*K.*) If, for example, the form of the skull is determined by the condition of cerebral development—and this, in turn, is regulated by habitual conditions of life—it is allowable to infer that the Mound-builders of the ruling class were distinguished by a cranial conformation of high type. This we might anticipate from the inferential results of aboriginal statecraft. The creation of vast and elaborate systems of military defense implies the contemporary existence of a teeming and industrious population. To maintain such a population by a systematic cultivation of the soil, and to organize it for the public service or for industrial pursuits by a methodical administration of definite and judicious laws, implies extraordinary capacity for affairs, and stamps the pre-historic statesman as the offspring of a superior race. (*L.*) We should naturally expect to find some evidence of this intellectual superiority in the configuration of the Mound-builder's skull; and though the requisite data are wanting to justify any positive or conclusive statement on this point, we shall not be altogether disappointed in our anticipations. Whilst it is difficult to find crania of incontestable antiquity in a good state of preservation, it is not impossible. There is at least one such specimen in the collection of Dr. Morton, [*Crania Americana*,] and this perfectly typifies, it is alleged, the cranial characteristics of the American race, and particularly of that singular family which Dr. Morton denominates *TOLTECAN*. It exhibits the salient peculiarities of the ancient Peruvian skull—the prominent vertex, the vertical or flattened occiput, and the marked inter-parietal breadth. The facial angle (a measurement on which Camper founds a distinction of races) is noted on the record as embracing  $81^{\circ}$ , the "internal capacity" of the skull being ninety cubic inches. The inferior bone of the jaw is said to be peculiarly massive, though less projecting than the maxillæ pertaining to skeletons of a later

date, while the general structure of the bony frame-work is such as marks the possession of exceptional size, activity, and strength. A skull taken from a mound in Tennessee revealed a facial angle of  $80^{\circ}$ , but the measurements of skulls found in the Mammoth Cave represent this angle as not exceeding  $68^{\circ}$ —which is considerably smaller than the facial angle of the Ethiopian or the Kalmuck, and is no doubt partly the result of artificial compression.\* Another skull, however, from the same cavern, presents an angle of  $78^{\circ}$ —a measurement which falls but little below that of the full-browed "Caucasian." The features of the mummy described on page 20 "resembled those of a tall, handsome American woman;" the "forehead was high," and the "head well formed." A skull taken from a large mound near Chillicothe represented, in the opinion of a high scientific authority, "the most perfect type of the Indian race." It was supposed to be the skull of a pre-historic leader.† We may fairly conclude, then, that the Mound-builder of high caste was a being of superior physical and mental organization—of commanding stature, composed and symmetrical features, an imposing cranial contour, and a bearing to which heredity, habit, and association had imparted an air of peculiar distinction. (*M.*)

The monumental evidences of the Mound-builder's existence are of great, though indeterminate, antiquity; and so far as the chronological problem requires the determination of exact dates from inexact data, it gives but little promise of an early solution. But the archæologist has not been altogether idle. He has carefully studied the monumental structure in every conceivable relationship—in its site, its surroundings, and its sepulchral remains. Noting the relative position of the structure and of the stream flowing beneath, he observes the geological process which determines the formation of a terrace, the shifting of a channel, or the accumulation of débris; he holds inquest over the crumbling

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\*It is clear that the habit of mechanical compression of the head was common to many American nations, and prevalent in Peru.—*Bradford's American Antiquities.*

†Vestiges of the Aborigines; *Western Journal.*



remains exhumed from the mounds, and finds evidences of antiquity in the peculiar condition of decay; he examines the forest trees which are rooted in its sepulchral depths, and finds "rings" indicating centuries of annual growth. (*N.*) From these and other circumstances mutually corroborative, he deduces the general conclusion which assigns to these monumental remains a positive antiquity of eight hundred years. Their possible antiquity has no assignable limit. (*O.*)

We do not undertake to devise or to suggest any theory in regard to the ethnological origin of the Mound-builders, since it is not theory that is wanted, but rigid induction from trustworthy data. A great deal of reckless speculation, on a limited basis of facts, has resulted in a bewildering diversity of views. To one class of theorists, it is quite clear that America was originally peopled by Mongolian hordes drifting across the narrow straits of Behring; to another class, equally clear that it was peopled by streams of Malaysians flowing from Asiatic seas, along the shores of the Pacific isles. One may very plausibly maintain *either* of these theories, to the exclusion of the other; he may very consistently adopt *both*.<sup>\*</sup> Other speculators, accepting neither the Malayan nor the Mongolian theory, variously ascribe the original peopling to the Atlantides, the Egyptians, the Hindoos, the Tartars, the Celts, the Polynesians, the Hebrews, and the Welsh.<sup>†</sup>

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<sup>\*</sup>As recently as the year 1872, a "junk," disabled by a storm on the Japanese coast, was carried by the ocean currents two thousand five hundred miles, to the island of Adaho, off the Alaskan shore. Three of the twenty-six shipwrecked Japanese survived the hardships of the voyage, and became involuntary citizens of the New World. Professor Henry, briefly criticising the speculations of Von Hellwald, says that the waters of Behring's Straits are frozen over probably every year as late as April; that intercourse is constant by means of canoes in summer between the Asiatic and American sides; and that the inhabitants of the contiguous countries are almost identical in manners, customs, and physical appearance. [See Annual Report, 1866, p. 345.]

<sup>†</sup>Dr. Much gives the following list: Jews, Carthaginians, Phœnicians, Egyptians, Macedonians, Celts, Teutons, Greeks, Romans, and Normans! He adds: "The opinion, advanced a long time ago, that the original inhabitants of America are of Mongolian extraction, is gaining more, more, and more

But, say theorists still more daring, why a derivative population at all? Are not the Americas the most ancient of the continents, and the aborigines true *autochthones*, and "racy of the soil?" It is obvious that no definite conclusions can be drawn from speculations so conflicting as these. The best we can do at present, therefore, is to content ourselves with believing that the Mound-builders were ethnically related to the very ancient and respectable family of Toltecs or Toltecas—a migratory group which the enquirer first sees moving plantasmally in the dim back-grounds of Clavigero. (*P.*) If we may credit the declarations of that industrious but not too discriminating archæologist, there can be no sort of doubt that the Toltecs came originally from the northern parts of America—driven from seats in which their ancestors had been settled for ages; that the Toltecan movement towards the South was the beginning of a series of migrations, occurring at successive dates from the middle of the seventh to the end of the twelfth century, and closing with the movement of the Aztecs pouring southward from the land of Aztlan. All these tribes were of the same descent, were alike in physiognomical traits, spoke the same language, claimed the same country, obeyed the same laws, and worshiped the same gods. It has been suggested, by an antiquarian critic, that the ancient Aztlan, from which the Aztecs were driven about the middle of the twelfth century, was situated "in some of the rich valleys of the West, where the memorials of an exiled race still abound." He founds the hypothesis upon an alleged etymology of the word Aztlan, meaning a "country of water," and upon a topographical representation of the *land*, Aztlan, preserved in Mexi-

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weight." Galindo supposes civilization to have originated in America. Others have adopted the same view, and it would certainly be a very curious result of these enquiries if eventually it should be shown that the valley of the Oxus derived its original populations from the valley of the Ohio. But Humboldt says: *La question générale de la première origine des habitans d'un continent est au-delà des limites prescrites à l'histoire; peut être même n'est elle pas un question philosophique.* [*Essai Politique*, Tom. I, p. 349; quoted by Prescott.]

can hieroglyphical remains.\* Be this as it may, it seems impossible, in general, to resist the somewhat impotent conclusion, that nothing short of extended and accurate inductive research will ever reveal the exact ethnological position and significance of the Mound-builder, or in any degree impart to his faded civilization the hues of historic life; since no sciences, according to the acute and laborious Squier, "require so extensive a range of facts to their elucidation, as Archæology and Ethnology, or the Sciences of Man and Nations."

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\* *American Antiquities*; Bradford.







## NOTES.

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[*Note A, p. 6.*]

The topographical relations and structural characteristics of the ancient remains on Green River; viewed in connection with other indications of an early conflict, strongly confirm this theory of a general and protracted struggle for the possession of the State. The most remarkable of the military remains on Green River are at *Indian Hill*, below Bear Creek; at the mouth of *Reedy*; and near Brownsville, the county seat of Edmonson. During the past summer there were found in the *Haunted Cave*, on the same river, a number of crania of the aboriginal type, and a well-preserved femur with an *arrow-head* firmly imbedded at the base of the neck. All the indications, in this instance, seemed to justify the inference of a running conflict and a retreat to the cave under the pressure of a hot pursuit. Many of the crania recovered from the *Haunted Cave* are now in the collection of Mr. Lucien Carr, of Cambridge, Massachusetts. They are in a much better state of preservation than the crania exhumed from the low-mounds in the Green River bottoms, since the conditions were somewhat more favorable for the prevention of decay. Mr. J. R. Procter, of the Shaler Geological Corps, writing privately under date of November 1st, quotes the opinion of an acknowledged master of the military art in regard to the significance of the Green River remains: "General Buell," he says, "who has been a resident of the Green River country for several years past, expresses the opinion that the Mound-builders exhibited a fine knowledge of defensive warfare, both in the selection and in the manner of fortifying the hill [*Indian Hill*] at the mouth of Bear Creek. He thinks the evidences are that they made a desperate fight before they were driven from the Green River country, and that there are many reasons for believing that it was a favorite locality with them." Mr. W. B. Page, the topographer of the same corps, has made a careful survey of the remains at *Indian Hill*, the results of which will no doubt be duly incorporated

with the archæological report of Mr. Carr.\* It will be found, however, that the military remains of the Mound-builder in the State of Ohio, though obviously constructed by the same people and with the same defensive intent, are the complex and elaborate structures of a settled and peaceful population, attempting to provide against the calamity which was destined to overtake them at last. Judge Force, of Ohio, in a recent treatise on the *Mound-builders*, says: "The extensive works of geometrical outline in the Scioto Valley . . . are executed with such precision, that they must have had some means of measuring angles. It would be no mean task for our engineers to construct them on such a scale with such exactitude. These works seem to have constituted a *line of permanent defense*."

Linguistic science throws but little light upon the problem. *Kentuck-e*, we may infer, was an immemorial phrase upon the lips of the aboriginal peoples. To the archæological enquirer, therefore, it is a matter of some interest to ascertain its precise etymological signification.† But upon this point the etymologists do not agree. One writer suggests that if the word is of Algonquin origin it is probably derived from two words signifying respectively *bone*, and *land* or *earth*. According to his interpretation, *Kentuck-e* means Bone Earth or the *Land of Bones*.‡ This etymology will hardly be accepted as final, but for the purposes of this discussion it matters little whether *Kentuck-e* signifies "the land of bones" or "the river of blood;" since either, from the present point of view, is sufficiently significant of bloody work lang syne. It is worthy of remark that, whatever the etymology suggested or assumed, essentially the same idea seems to be rooted in the word, and this radical identity of signification is quite in harmony with the traditional repute of Kentucky as the pre-historic battle-ground of the Southwest.

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[*Note B, p. 11.*]

CATLIN, describing the defenses of a Mandan village, says: "The ditch (unlike that of *civilized* modes of fortification) is *inside* of the piquet, in which their warriors screen their bodies from the view and weapons of their enemies, whilst they are reloading and discharging their weapons through the piquets."§ The modern "rifle-pit," or a hedge defended from an interior trench, is the civilized analogue of the Mandan fortification. In these, and similar, works, it is "cover," and not the creation of an obstruction, that is the special object to be

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\*The well-known archæologist, Mr. F. W. Putnam, has recently been "cave-hunting" in the same region, under the auspices of the same survey. His explorations thus far have been crowned with a degree of success that promises a contribution of decisive value to our knowledge of the pre-historic folk.

†Names of continents, peoples, rivers, and mountains have an extraordinary vitality, and they will continue while cities, kingdoms, and nations pass away.—MAX. MÜLLER.

‡Historical Magazine, Vol. I, p. 283. Boston: C. B. Richardson, 1857.

§See Catlin's *North American Indians*, Vol. I, p. 81, 8th ed.; London: Bohn, 1851.

attained. It will be found, too, that in civilized, as well as in savage warfare, the *interior* ditch is always the more convenient and practicable when the occasion is pressing, the working force limited, and the material scant. An elaborate breastwork, with a parapet and *exterior* ditch, is usually constructed under conditions wholly different.

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[Note C, p. 12.]

The fermented juice of the maize was a favorite beverage in Peru. There were two varieties of this drink—*chicha* and *sora*—and the latter is said to have been of such strength that “the use of it was forbidden by the Incas to the common people.” This is remarkable as the first attempt to impose a prohibitory liquor law, of which we have any knowledge, in the history of the New World; and it is one of the few instances, curiously enough, in which those paternal despots, the Incas, failed to enforce their inexorable decrees. Whether the Mound-builder of Kentucky shared the Toltecan affinity for strong drink does not clearly appear; but it is fair to presume that he did, since the passion is not merely Toltecan, but universal. When *chicha*, *sora*, or fermented corn-juice attains its highest stage of development, it is closely allied to the modern distillate known as *Bourbon whiskey*; and it would be an interesting fact to record that the pre-historic Kentuckian was familiar with that potent beverage in one of its earlier and cruder forms. But in the latitude of 39°, the climatic conditions are not particularly favorable to the production of saccharine matter in the maize-stalk; and we must conclude, therefore, that the Mound-builder who “drank” was obliged either to content himself with the fermented juice of the maple, (*acer saccharinum*,) or to import his fermented liquors from Anahuac and the countries of the South. Possibly there is a poetic allusion to the physiological effects of the Grain Spirit in the beautiful legend which celebrates “the mysteries of Mondamin:”

Faint with famine, Hiawatha  
Forth into the flush of sunset  
Came, and wrestled with Mondamin:  
At his touch he felt new courage  
Throbbing in his brain and bosom,  
Felt new life and hope and vigor  
Run through every nerve and fibre.  
  
Round about him spun the landscape,  
Sky and forest reeled together.\*

It was Hiawatha, according to the old legend, who first taught the aborigines the arts of peace, and we have the assurance of a high scientific authority, that among the earliest arts of any people emerging from savagery is the manufacturing of an intoxicating compound of some kind!†

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\*The Song of Hiawatha; Longfellow.

† Dr. William A. Hammond.

## [Note D, p. 13.]

Traces of the priapic cultus have been found in the Mississippi Valley, in Mexico, in Central America, and in Peru. Wherever the Toltecan peoples founded their peculiar civilization, they erected the symbols of their faith, and scrupulously observed the rites of the phallic cult. Several images illustrative of the symbolism of this ancient form of worship were found by the late Professor Gerard Troost, in Smith county, Tennessee,—one of the figures exhibiting a phallus of abnormal proportions.\* Dr. Ramsay, of Knoxville, describes similar specimens; Dr. Foster refers briefly to an “obscene figure” taken from a mound at Laporte, Indiana; and a phallic symbol carved in stone is said to have been found a few years since, near the town of Augusta, in this State. The late Abbé Brasseur de Bourbourg indulged the suspicion that the phallic mysteries (like syphilis, salivation, and a variety of odious “vulgarisms”) had their origin in this prolific American world!

## [Note E, p. 14.]

Serpent-Worship has been associated with the phallic cultus from the earliest times. Certain advanced thinkers affirm that we have a phallic legend in the Mosaic account of “the Fall;” and that the Semitic cosmogony rests upon a phallic basis.† Mr. Fergusson, who asserts the Turanian origin of Serpent-Worship, declares that apparently no Semitic or Aryan people ever adopted it as a form of faith. There can be little doubt that this ancient superstition prevailed among the Mound-builders of America. There is an aboriginal legend which represents a serpent as the father of the human race; and this legend is in harmony with the mythological tradition of the ancient Mexicans, which describes the primitive mother as “the woman of the Serpent.”’ But the evidence does not rest wholly on tradition. The serpentine structures of Greenup have already been described [p. 9.] A short distance below this point, on the Ohio river, in one of the counties bordering the right bank of the stream, there is the enormous *bas relief*, first described by Squier and Davis in 1846, known as the *Serpent and Egg*, an earth-work, in the form of a serpent, upwards of one thousand feet in length, with an ovoidal figure resting partly within its distended jaws.‡ Among the symbolical remains discovered at Marietta, Ohio, was “the figure of a woman standing on a serpent and supporting the Sun;” and it has recently been affirmed on good authority that the worship of the Serpent God still reigns supreme among the people of Taos, New Mexico. If the Fergussonian theory be correct, it furnishes ground for a precise and plausible inference as to the ethnical origin, or affinities, of the Mound-building race.

\* The Public Library at Louisville has recently purchased the collection of Professor Troost.

† Ancient Symbol Worship.

‡ The Serpent Symbol.



[*Note F, p. 17.*]

The craniological classification of Retzins divides the aboriginal inhabitants of America, with admirable precision, into *Dolico-cephali* and *Brachy-cephali*, the former class prevailing in the Eastern and the latter in the Western part of the Continent—the one of a Moorish, the other of a Mongolian type. These types are represented respectively by the Algonquins, Iroquois, and Cherokees on the one hand, and by the Aztecs, Natchez, Creeks, Seminoles, and Mound-builders on the other. It is scarcely possible, after this precise and comprehensive classification, that any one will venture to question the claims of craniometry to the position of an exact science! The late Dr. Foster had a similar penchant for building theories upon craniometric data.\* The entire Mississippi Valley has yielded to patient and extended scientific exploration not more than a dozen indisputable specimens of the Mound-builders' skulls. Yet, Dr. Foster, working in a field of limited area, and with but little assistance in his explorations, professes to have exhumed, in a good state of preservation, no fewer than a dozen authentic crania; and these of an anatomical configuration radically different from the crania previously exhumed from the Mounds of the Mississippi Valley by competent and trustworthy explorers! The peculiar anatomical characteristics of these crania are, the narrow forehead, the receding brow, the prominent vertex, and that "gothic arch outline" of the longitudinal arc, which he regards as typical of the Mound-builder's skull. All the specimens exhumed by Dr. Foster indicated "a low intellectual organization, little removed from that of the idiot;" and he concludes that the Mound-building race "must have been intellectually below the lowest types of Australia." By way of contrast, it may be interesting to quote the same author's description of a figure† modelled by an artist of the Mound-building era: "When we critically examine the head we are convinced that the unknown artist had the skill to impress upon the plastic clay the *features of his race*. These features are not characteristic of the Indian. The facial angle is one indicating intelligence; the lips are not prominent; the eyes have not the obliquity of the Red man; the jaws are not prognathous; and the contour of the face is such as distinguishes the enlightened races."

Dr. Foster's hypothesis is an ingenious bit of speculation, but is objectionable, chiefly on the following grounds: It assumes too much; it is in conflict with established facts; it rests upon data of doubtful authority; it is not consistent in all its parts; it fails to present an adequate explanation of all the facts embraced in the problem to be solved. But what is most remarkable, is the calmness with which this able investigator sweeps behind him the results of all previous research.

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\* Pre-historic Races, by J. W. Foster, LL.D.; Chicago: S. C. Grigg & Co., 1873.

† Found near Belmont, Mo.

[*Note G, p. 18.*]

Mr. CHARLES RAU, an eminent American archæologist, asserts that, so far as is known, the aborigines of North America were unacquainted with the art of glazing pottery.\* There seems to be no doubt, however, that in some parts of the continent, there had been extraordinary advances in the ceramic art. In 1873, Mr. William M. Kinley, of Milledgeville, Ga., sent to the Smithsonian Institute a funeral urn of archaic type, exquisitely designed, and coated on the interior surface with "a white hard *thin enamel*;" upon the outer surface was an inscription of mysterious import, and the whole was elaborately wrought. Dr. F. V. Hayden, in detailing the results of some recent explorations, says that there once existed "in what are now the arid plains and savage gorges of Southeastern Colorado, a race so far civilized that they built large cities, . . . and possessed the art of making a glazed pottery."† The Mound-builders were unquestionably skilful potters, and it is not incredible that they were quick to perceive the value of the superficial vitrification which sometimes occurred in the process of baking. At the same time, it must be acknowledged that such specimens as the Oconee funeral urn are unique.

There is no conclusive proof that the Mound-builders were acquainted with the "potter's wheel" even in its simplest forms. Commonly, their pottery was modelled in baskets of willow.

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[*Note H, p. 18.*]

Dr. ROBERT PETER, a careful and competent observer, reports that several years ago there were taken from an ancient mound near Lexington, Ky., among other interesting relics, two "*copper axes*" and "three hemispherical articles of *iron*."‡ There can be no doubt that these articles were taken from a mound of the earliest period; and yet, it is by no means necessary to infer that the Kentuckians of that period were acquainted with any process of reducing iron-ore. "Iron was altogether unknown to the natives of America," says Mr. Rau, "until Europeans taught them its use." It is doubtless true, that the South American tribes used arrow-heads of meteoric iron; that iron pyrites were wrought by the Mexicans into articles of ornament and use; that hatchets of hæmatite were found in the mounds of Ohio; and that the specular ores of Missouri were wrought into shape by the same processes that fashion a *stone*: but there is no evidence, so far as we can ascertain, that the primitive inhabitants of the West were acquainted with the art of *smelting* the native ores. To the Mound-builder, the native ore was merely a *stone*, which by a simple process of chipping and attrition was convertible into articles of familiar and varied use. Dwellers in the Green River Valley assure us that a variety of hæmatitic ore which abounds in

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\*Smithsonian Report, 1866.

†Scientific American, November 28, 1874.

‡ Report to the Smithsonian Institute.

the region, was formerly wrought into "marbles" by that *enfant terrible*—the boy of the historic period; and it is fairly presumable that the mechanical methods employed by the Mound-builder were those subsequently adopted by the ingenious youth.

Dr. Foster thinks it evident that the Mound-builders possessed the art of smelting *copper*. Other archæologists are satisfied that they used native copper simply as a "malleable stone," and Sir John Lubbock's classification very appropriately assigns the products of their art to the second phase of the Stone Period, though it is evident they were then passing into a higher stage of culture.

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[Note I, p. 21.]

Dr. FOSTER, in his *Pre-historic Races*, affirms that the Mound-builders clothed themselves in a fabric "regularly spun with a uniform thread, and woven with a warp and woof;" and he claims to have discovered the evidences of this "advance in civilization" as far back as 1838—some fragments of cloth having been taken from a mound near Charlestown, in Jackson county, during his geological investigations in Southern Ohio. Similar fragments having been subsequently recovered from the mounds in that State, the evidence was so conclusive that he "no longer hesitated as to the authentic character" of his previous discoveries.\* Fragments of cloth have been discovered by other explorers, under similar conditions, in the ancient mounds at Aztalan.†

According to Dr. Foster, these facts "go far to dis sever the present race of Indians from the Mound-builders, and to link the latter to the civilized races of Central America." But is not the evidence equally decisive as to the affinities of the pre-historic people who buried their dead in the caves of Kentucky and Tennessee? Dr. Foster says that cave-burial was "probably resorted to by the Mound-builders," but thinks it is impossible to identify "the cave-tenants" clearly with the people of the Mounds. From this declaration it is evident that Dr. Foster had but little knowledge of these tenants of the Kentucky caves, although they were described, in minute detail, at least a quarter of a century before his fragments of primitive cloth were taken from the mounds of Southern Ohio! But if these fragments of cloth go far to identify the Mound-builders with the peoples of Central America, is not the inference irresistible that they serve, likewise, to identify the mummies of the Kentucky caves with the mysterious tenants of the Ohio Mounds?

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[Note J, p. 25.]

Mr. E. G. SQUIER says that the *Gautusos* of Central America "are reputed to be above the ordinary stature, with comparatively *light complexions and red*

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\* Pre-historic Races, p. 226.

† Historical Magazine, Vol. II, p. 268; Richardson, N. Y.

*hair*;"\* but immediately adds that the story is entitled to no credit. The Mandans, however, were undoubtedly of a light complexion, and were commonly known as the White Indians—a fact which, coupled with the unanimous testimony of aboriginal tradition,† would seem to support Mr. Catlin's hypothesis, that the Mandans were a remnant of the Mound-building race; which, nevertheless, they were not, if it be true, as has been suggested, that the Mound-builders had *red hair*; since, as Mr. Catlin himself affirms, no Mandan was ever known with hair of that color, or of any kindred hue, though he himself observed among them every other shade known to civilization, and possibly several varieties that are not. If, on the other hand, it could be shown that the Mound-builder had a *dark* or *brown* complexion, with red hair, it would justify the suspicion that he was, in some degree, related to the Caribs and Copts, whose hair and complexion were of a color that has been accurately discriminated as "a reddish brown." But the craniometric experts inform us that whilst there might be, in this particular instance, an absolute identity in the color of the complexion and the tint of the hair, there is a radical and irreconcilable difference in the configuration of the *skull*:‡ that, therefore, our crinological speculations are illusory; and, so far as the purposes of this enquiry are concerned, utterly valueless in the determination of origin, affinities, status, or type.

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[*Note K, p. 25.*]

In discussing the significance of the osseous remains recovered from the mounds of the South and West, it were scarcely proper to omit a passing reference to the bearing of the testimony which they furnish, upon the vexed question of the origin of the Venereal Disease. Certain European writers have strenuously insisted that the disease originated primarily in America, and, escaping from its native *fons malorum*, swept over Europe like an epidemic, toward the close of the fifteenth century. The historical evidence upon this point is utterly irreconcilable with such a conclusion, but pathological research has of late years reënforced the hypothesis with the suggestive statement that certain bones taken from the American mounds exhibit characteristic traces of venereal disease. For example, Dr. A. J. Comfort, of the United States Army, in detailing the results of his recent explorations, describes some bones taken from an ancient Dakota mound. He says: "On the cranium and tibia, I observed several small bony tumors, of an almost pearly whiteness and great hardness, the largest about the size and shape of a half-pea. These tumors, which are called in surgery *exostoses*, are most generally the result of syphilis, though they may be attributed to other causes."|| In the anatomical museum of the Uni-

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\* Historical Magazine, Vol. IV, p. 65; New York: Richardson & Co., 1860. † See page 23.

‡ Dr Foster's crania are neither brachy-cephalic nor dolico-cephalic. He describes them as orthocephalic,—an intermediate type.

|| Smithsonian Report, 1871.



versity of Louisiana, there is a collection of bones, taken from a burial-ground in the Valley of the Cumberland, which is said to present unmistakable traces of the disease. These remains were described by Dr. S. P. Cutler, of Memphis, Tenn., in a series of papers contributed to the *Nashville Medical Journal* in the spring and summer of 1873. The same collection was recently examined by Dr. Buffington, of Baton Rouge, La., and he concurs in the views of Dr. Cutler, as to the evidences of constitutional syphilis manifest in the diseased condition of many of the bones. In a letter to the writer of this note, Dr. Cutler says, that the implements found with the diseased remains "show quite an advanced state of civilization;" that "the crania are of the high type of North American Indians;" and that Dr. Jones, of New Orleans,\* is of the opinion that they belonged to the aboriginal Natchez tribe or nation, a race which was numerous and powerful even within historic times. Now, granting it to be true, as ethnology seems to indicate, that the Natchez Indians were a remnant of the Mound-building race; that the recent explorations have accurately identified their primitive burial-ground in the Valley of the Cumberland; and that the deposition or interment of these "tertiary" forms antedated the Columbian era,—it is still evident to a careful enquirer that the supposed facts serve to establish but one point, viz: that the Mound-builder was the victim of a constitutional malady which produced certain changes in the osseous tissue; of a disease which may or may not have been syphilis; which, however, was very much like syphilis; and which, therefore, may have been *lepra*—the pathological counterpart of syphilis, and, by some writers, regarded as essentially indistinguishable from that affection. Admitting, however, that the lesions were *syphilitic*, it yet remains to determine the primary source or origin of the disease. Did the Mound-builder, or the indigenous American, originate the malady *de novo* by impure forms of intercourse? or did he derive it from ancestors who transplanted the germs from their native haunts in the East? or did he but share a common "heritage of woe" derived from that primeval satyr—the Darwinian man?†

Whatever inference may be drawn from these facts as to the independent origin of syphilis in pre-historic America and among a primitive people rigidly observant of phallic rites, it is certain that the conclusions of modern syphilography are in direct conflict with the assumption that America was the primary source of the evil, and the original centre of its diffusion among mankind. It has been suggestively remarked, in connection with this point, that in the languages of aboriginal America there was *no name* for the Venereal Disease. In modern Europe, however, it has had many names; being variously known as

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\* Professor of Clinical Medicine in the University of Louisiana.

† An eminent American syphilographer queries thus: If, as Darwin declares, we are descended from these animals, is it not reasonable to suppose that they are subject to the same diseases that we are? Nay, further, may we not have inherited syphilis directly from them, as a legacy from our illustrious progenitors?—[S. D. Gross, M.D., LL.D., D. C. L. Oxon.]

morbus Hispanicus, morbus Italicus, mal de Naples, mal Français, etc., etc.,—all designations of an exotic malady!\*

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[*Note L, p. 25.*]

The crania of the master-races of Mexico and Peru exhibit all the anatomical characteristics indicative of superior intellectual force; and these indications of mental superiority become even more pronounced when the crania are brought in direct contrast with those of the subject race. It may be assumed that society among the Toltecan Mound-builders of the Mississippi Valley was organized under analogous conditions, to-wit: a governing class distinguished by every attribute of social superiority, and a proletariat with all the characteristics of a slave-race. Nor is it utterly extravagant to suggest that the Mound-building races of a degraded or undeveloped type constituted a laboring class which, subjugated and disciplined by a superior race, became, under the shaping influences of primitive usage, the "corner stone" of that ancient civilization. Assuming that the Mound-builder of low-caste was a creature of inferior mental capacity, (and possibly allied to the type described in Foster's *Pre-historic Races*,) is it not permissible to infer that a like stamp of superiority was impressed upon his *physique*? Recent investigators have declared that the narrow dimensions of the tunnels in the mica-mines of the Southeast "suggest forcibly" the idea that the mines were worked by a race of smaller stature than the Indians of a later date. This suggestion would have more value, however, if it could be shown that the *skeletons* removed from the ancient graves in the vicinity of the mines were the remains of an inferior or stunted race. Such a fact, construed by the light of analogy and tradition, would justify the inference of a pre-historic government by *caste*, and the assumption of the temporary existence of a pygmy proletariat, constituting "the peculiar institution" of the aboriginal States. There is abundant evidence to show that the Mound-builder was a liberal "constructionist" in the matter of internal improvements; and if the statements recently made by Colonel Du Pré are founded upon accurate observations, the results of primitive enterprise are a reproach to civilizations of a modern date. Centuries ago, the Mound-builders who dwelt in the Mississippi Valley constructed a system of canals by which they reclaimed their lands from desolating floods and deadly exhalations; they irrigated and fertilized their fields by a diversion of the superabundant waters; and, by a vast extension of the same admirable system of drainage, they "solved the problem of cheap transportation" upon the Mississippi.† Their military

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\*In 1518, Leonhard Schmauss, a physician of Nuremburg, Germany, finding that the "Guaja wood" was a good remedy for syphilis, concluded that the disease must have been derived from America; "for," said he, "nature always provides an antidote in the vicinity of a poison." This philosophic conclusion was confirmed by the impartial testimony of Oviedo.

† Southern Magazine; June, 1874.

remains are found upon the banks of the same river—a series of earth-works constructed upon a varied trace of angle and curve, or simply in long straight defensive lines, as was determined by the opportunities or the exigencies of a tumultuous retreat. But their bridges with brick abutments, and their artificial lakes paved with adobe, must have been constructed in the piping times of peace.

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[Note M, p. 26.]

The late Lord Lytton, seeking a physiognomical type for his Coming Man, “prolonged the vision backwards” beyond the boundaries of the historic period, and found it in the lineaments of a vanished race. “It was the face of a man,” he says, “but yet of a type of man distinct from our known extant races. The nearest approach to it in outline and expression is the face of the sculptured sphinx—so regular in its calm intellectual mysterious beauty. Its color was peculiar, more like that of the red man than any other variety of our species, and yet different from it—a richer and softer hue, with large black eyes, deep and brilliant, and brows arched as a semi-circle.” The accomplished author of *Anahuac*, describing an Aztec mask, says that “the face was well-proportioned, pleasing, and of great symmetry”—the expression “remarkably placid and contemplative.”\* Nor was the Belmont figure modelled upon a degraded type of skull; on the contrary, “the contour of the face is such as distinguishes the enlightened races;”† and the facial configuration of the carved or “sculptured” images recovered from the Ohio mounds is essentially of the same type.

Mr. Walter Bagehot, in a recent treatise, dwells with emphasis upon the importance of “manner” in primitive societies. “In early society,” he says, “a dignified manner is of essential importance. To this day, it is rare to find a savage chief without it.”‡ The late N. P. Willis, whilom an authority in “society” matters, had remarked the same characteristic many years before, in the savage ambassadors whom he met at Washington. “The North American Indian,” he writes, “in his more dignified phase, approaches nearer to the manner of an English nobleman than any other person.” *Les extrêmes se touchent*. The modern Red Man finds his social counterpart at the Court of St. James; and the manners of the current period are faithfully mirrored in the pre-historic past.

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[Note N, p. 27.]

From the circumstance that the earth-structures of the Mound Period are commonly found upon the second and third, or upper, terraces of the river-valleys, it was formerly supposed that the alluvial “bottoms,” being forma-

\* *Anahuac*, p. 338.

† See Note F.

‡ *Physics and Politics*, p. 151.

tions of a later date, were not in existence at the time the mounds were built. Hence, fallacious inferences as to the Mound-builder's antiquity. But this error was long ago corrected by the archæologist who first gave it currency; and the ancient order of antiquaries, after a careful scrutiny of the facts, is gradually drifting to the conclusion, that the Mound-builder gave a decisive proof of sagacity in *cultivating* the alluvial bottoms, whilst placing his elaborate earth-structures beyond the reach of the floods! At the same time, there is the best possible ground for the conclusion, that he sometimes constructed earth-works upon the *lower* formations—his structural remains having actually been traced to the water's edge; as, for example, the walled avenue, or covered way, at Piqa; the lines of embankment at Portsmouth;\* and the long passages or parallels of the corresponding group on the Kentucky shore.†

Conclusions deduced from the condition of exhumed remains are also apt to be fallacious. Bones taken from the mounds in this State are found almost invariably in a fragmentary and crumbling condition. The cancellated or spongy structure of the long bones is usually the first to decay; the organic matter gradually disappears from the compact tissue, and, whilst the bones, if undisturbed, retain their distinctive shape, only the earthy, or inorganic, constituents remain, and the entire structure becoming porous and friable, speedily dissolves when exposed to the atmosphere, or crumbles at the first touch of the explorer's pick. But the length of time required to produce these changes in the texture of human bones depends upon conditions so varied as to justify only the very general conclusion that "that which decayeth and waxeth old is ready to vanish away." The problem becomes even more complicated when we reflect that these chemical or textural changes are not due solely to special conditions of inhumation, but are dependent, in a degree, upon antecedent conditions of the tissue itself, since the composition and structure of bone are modified by constitutional causes, such as age, disease, etc., as well as by the operation of external agents,—soil, heat, cold, moisture; antiseptic solutions, solvent waters, and "sacrificial" fires.‡

In regard, however, to the reliquæ of the mounds, thus much may be assumed as true; that in all cases of original or primary interment in a dry compact woodland soil, it affords a presumption of high antiquity to find the remains in an advanced condition of decay; and where, as in this instance, other indications point to the same conclusion, the strength of the presumption is proportionately increased. But beyond this, it is impossible to deduce any precise or positive inference as to the antiquity of these remains.

Trees from two hundred to eight hundred years old have been found growing upon the mounds and other earth-works of Kentucky and Ohio. ||

\* Judge Force.

† Vide *supra*; p. 9.

‡ Charred bones have been recovered from the "Altar" Mounds.

|| See Collins, Force, Foster, Hildreth, Squier, and other writers on the archæology of the West.



[*Note O, p. 27.*]

SIR JOHN LUBBOCK asserts that there "does not, as yet, appear to be any decisive proof that man coëxisted in America with the mammoth and the mastodon." Mr. C. C. Jones, Jr., thinks it may be affirmed with considerable confidence that man was contemporary with both.\* Dr. M. Much, in a communication to the Anthropological Institute of Vienna, declares that "from the report of Dr. Koch on the mastodon found in Gasconade county, Missouri, it is beyond doubt that man existed in America as early as that animal." Dr. Koch described the bones discovered in the Pomme de Terre bottom as having been found "in a layer of vegetable mould, covered *twenty feet* in thickness by alternate layers of sand, clay, and gravel." Dr. P. R. Hoy, of Racine, who visited the same spot thirty years ago, declares that the excavation "was not more than *six feet* deep," and that the discovery was made in "scooping a hole for drinking-water, at a depth of only about *two feet* beneath the surface."†

There is another fact, in connection with the general subject, which is not wholly without significance. In the caves and "rock-shelters" of Dordogne, have been found fragments of mammoth-tusks upon which were engraved, in rude outline, representations of the mammoth itself:—obviously, the clumsy etchings of a contemporary artist. Whilst hundreds of "mound-sculptures," however, have been recovered from the tumuli of the Mississippi Valley—faithful representations of existing species, including animals of a tropical habitat a thousand miles distant from the Mounds,—there does not appear to have been discovered, as yet, in any part of the Mississippi Valley, a recognizable representation of the mastodon or the mammoth! But it has been suggested that the "mammoth" survives in tradition as the Big Bull of Bone Lick who defying the bolts of the Great Spirit, and bounding over rivers and lakes,‡ became a wanderer in Canadian wilds. It is easy to see that, whilst so formidable a creature might deeply impress the imagination of a pre-historic artist, it was equally liable to confuse his perceptions, and to confound the cunning of his hand.

Apropos of Dr. Koch's alleged discovery, Mr. Edward T. Stevens has called attention to the fact that Dr. K. does not mention that the implements associated with the mastodon bones differ in any respect from those found upon the surface soil. According to Colonel Jones, who is an accomplished archaeologist, they do not differ "in general appearance, material, and mode of construction" from the Indian implements of a more recent period.|| There being no special types, therefore, peculiar to the earliest period of the Stone Age of America, the

\* North American Review, January, 1874, p. 87.

† Journal of the Anthropological Institute, New York; Westermann, 1871-2. Doubt likewise rests upon the Natchez os innominatum, and upon the Calaveras skull. There is danger, too, that Dr. Dowler's "buried forests" will be resolved into accumulations of "drift," and his paulo-pre-historic citizen into a savage of the vulgar modern type.

‡ A tradition recorded by Mr. Jefferson.

|| North American Review, January, 1874, p. 74.

period in which man is assumed to have coëxisted with the mastodon and the mammoth,—Mr. Stevens suggests that the distinctions of Palæolithic and Neolithic adopted in Europe “are not applicable to American antiquities in the present state of our knowledge on the subject.”\*

The researches of Dr. Leidy, and the recent explorations of Professor Marsh, have settled the question as to the existence of the *horse* in pre-historic times. But it would be premature to conclude that any of these primeval quadrupeds—mastodon, horse, or mammoth—were haltered or harnessed in the service of a pre-historic civilization.

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[*Note P, p. 28.*]

Dr. M. MUCH, in a communication to the Anthropological Institute of Vienna, remarks: “I cannot help thinking that the Mississippi Valley may have been at one time the home of the Aztecs and Toltecs, who there created, so to speak, the first crude models of their later wonderful structures, carrying with them their higher civilization and developing it still further . . . while the inferior race . . . took possession of their abandoned dwellings.” According to the same writer, all investigators agree that the builders of these mounds “belonged to a much higher civilization than those of the small grave-mounds of the East or the Indians of the present day.”† The Abbé Brasseur de Bourbourg adopts the hypothesis that the Toltecs, or Nahuas, of Mexico, were identical in origin with the Mound-builders of the Mississippi Valley. It has frequently been suggested that the Natchez Indians were a remnant of the same ancient race; and, if it be true, as some have supposed, that the Natchez were related to the Aztecs, there is certainly ground for the belief that the Mound-builders not only resembled the Aztecs and Natchez in external habits and conditions, but, what is at least of equal weight, that they exhibited an identical, and, at the same time, an independent, development of those subtle qualities of *race* which are not communicable under the ordinary conditions of ethnical contact. It is evident, therefore, assuming these views to be correct, that the results of ethnological research point to the peculiar civilization of the Natchez as the “missing link” which connects the Mound-builder with the Aztecs, and the historic period with the pre-historic past. But a doubt still hangs over the clearest speculations on these and other points relating to the origin and affinities of the Mound-building race; and in spite of the confident assumptions of writers who have special theories to maintain, it is not too much to say that the general enquiry embraces problems which (Edipus and Davus are equally competent to solve.‡

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\*Flint Chips; London: Bell & Daldy, 1870.

†Smithsonian Report for 1871, (published in 1873,) p. 429.

‡ Since the above note was in type, the writer has received a printed report of Professor Putnam's remarks before the Boston Society of Natural History, touching the results of his recent explorations in the southwestern part of this State. Whatever may be thought of Professor P.'s ethnological

conclusions, he has certainly sustained his distinguished reputation as an archæological explorer. Though actively engaged, at the same time, in other fields of research, the results of his autumnal "cave-hunting" constitute an invaluable contribution to the pre-historic archæology of the South and West. In regard to Professor P.'s general views on this subject, it is evident that he inclines to the belief that the ancient Mexicans, the Mound-builders, and the "later Indian tribes of the South" were of the same original stock; but, with the caution of a practiced and philosophical investigator, he refuses to admit that "the unity of the Mound-builders with the other short-headed people of America" is an established fact. He mentions the old Mandans, the Pueblo Indians, and the Flatheads as having points allying them to the people of the Mounds. The crania which he found in the tumuli of the Green River Country "were of a form very closely resembling the high, short, and broad crania of the Mound-builders." He gives an accurate and interesting description of the "circular graves" in that region, and promises a fuller description of the crania at a future day. The results of his explorations in the "Salt Cave" not only confirm the conclusions of previous investigators as to the Mound-builders' acquaintance with the art of weaving, but, in Professor Putnam's opinion, seem to establish the propriety of "classing this people among the more highly civilized and agricultural of the pre-historic races of America." Professor P. informs us that the so-called "Mammoth Cave" mummy, now in the rooms of the Antiquarian Society of Worcester, was in reality taken from the "Salt Cave," and carried to the Mammoth Cave, eight miles distant, for purposes of exhibition. The early history of the latter cave being very obscure, the number of mummies recovered from its depths is not accurately known; but we have reason to believe that many of them were destroyed—the explorer of the "pioneer" period looking to the future rather than to the past, and having but little more respect for a dead "Indian" than for a live one. Archæologists will be keenly interested, therefore, in any description which Professor Putnam may furnish of the osteological characteristics of the mummy in the Worcester collection.

It is to be hoped that Professor P. will resume, at an early day, his archæological explorations in this State.

FEBRUARY 4, 1875.









